

ABSTRACT OF THE DISCLOSURE

Methods and systems for tracking signals with diverse polarization properties address both sensitivity and antenna tracking performance issues. In one embodiment, complex weightings for matching a polarization of an incident signal on a data channel are determined, and the complex weightings are applied to a tracking channel such that an antenna system polarization is matched to the polarization of the incident signal. In another embodiment, orthogonally polarized tracking channel components of an incident signal are processed to make a determination as to which of the orthogonally polarized tracking channel components is stronger, and this determination is used to select a polarization of a data channel to reduce a polarization mismatch loss.